

# Srovnávací morfologie živočichů

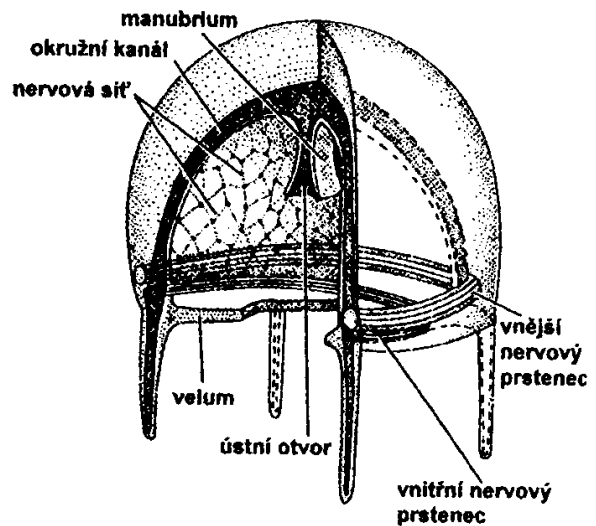
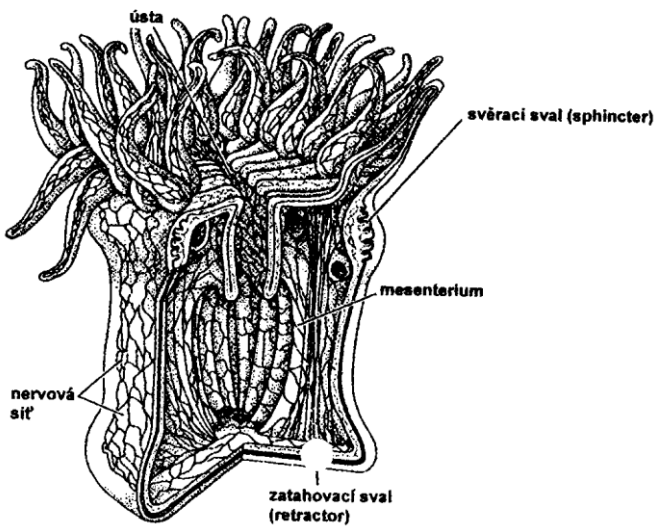
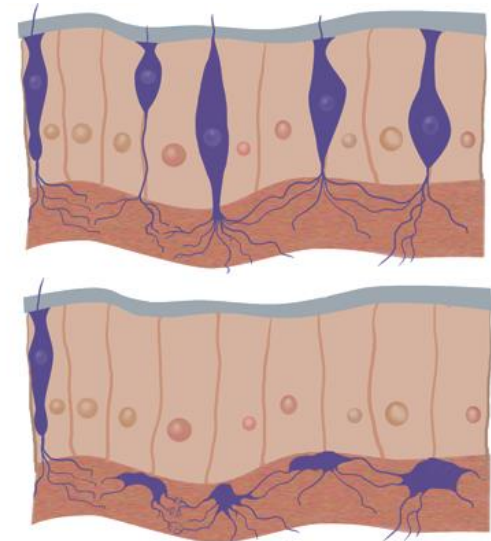
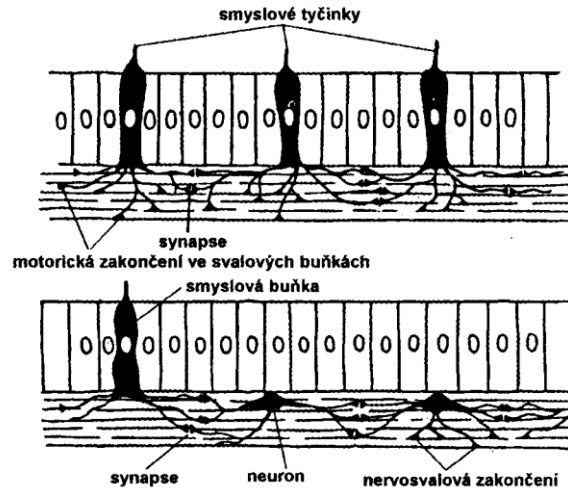
Nervová soustava

# Nervová soustava

Vznik neuronů zanořováním smyslových buněk

Difuzní NS

Žahavci

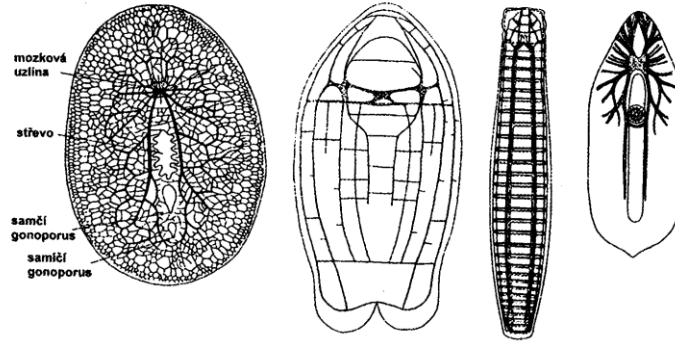


Centralizace NS u medúz - vznik nervových prstenců, vysoká koncentrace neuronů u ropálií (smyslové org.)

# Nervová soustava

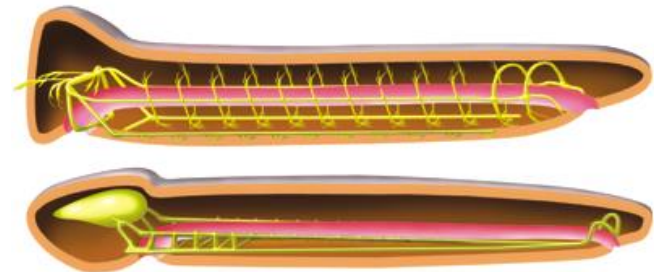
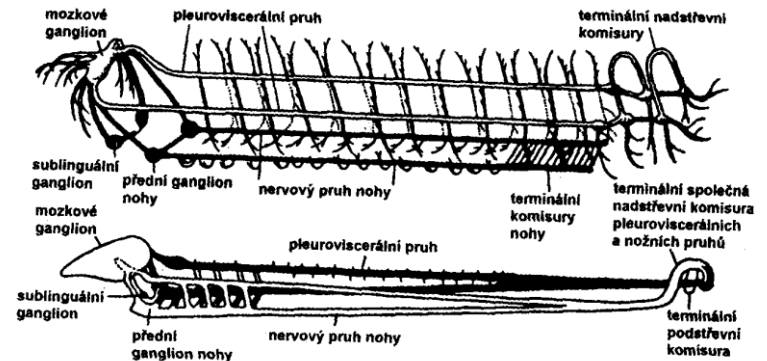
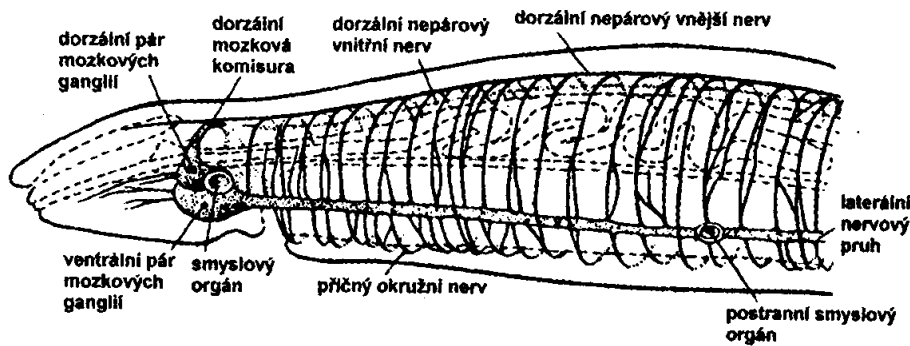
## Gangliová NS

### Ploštěnci



Ganglia a nervové pruhy

Gangliová žebříčková NS - komisury



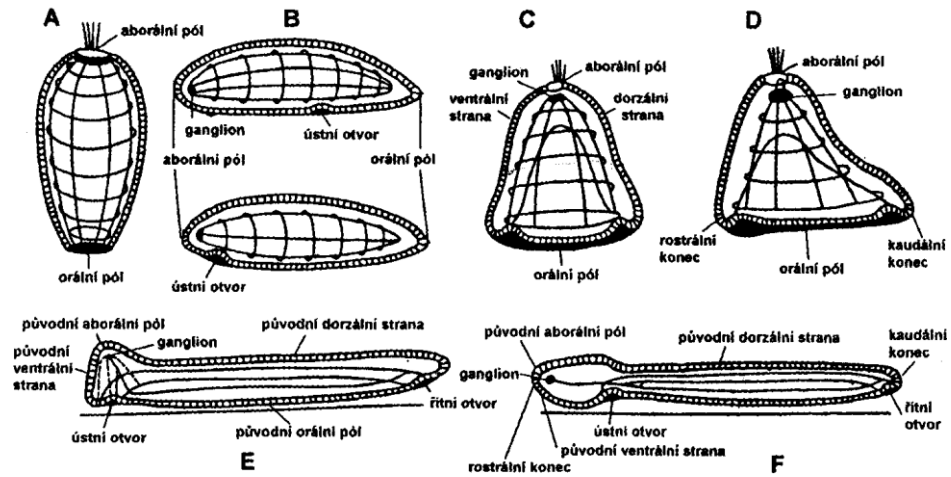
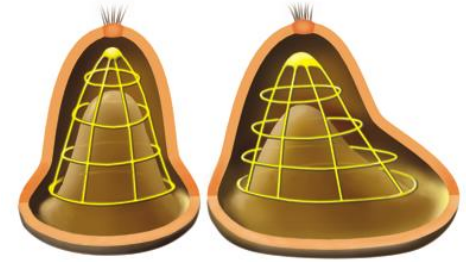
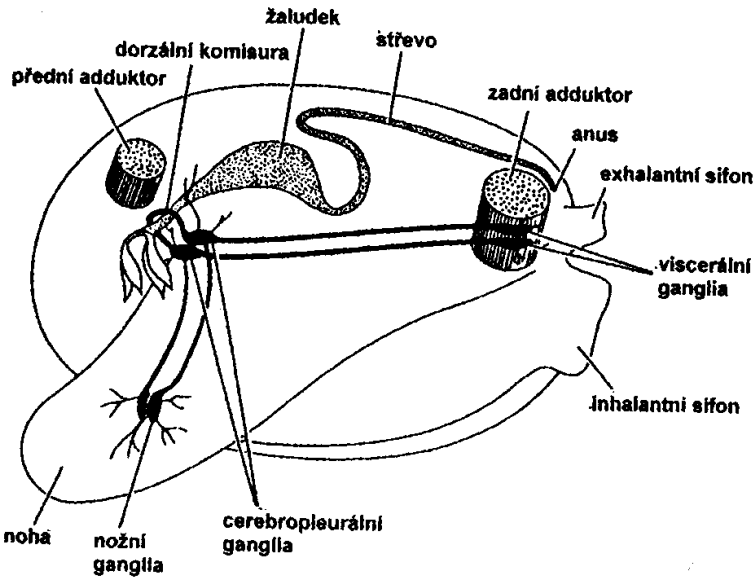
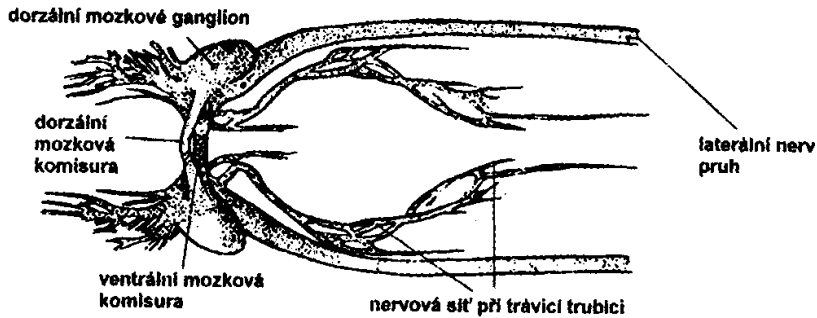
### Pásnice

Trend zanořování ektodermální NS

### Primitivní měkkýši

# Nervová soustava

## Cephalizace NS u pásnic

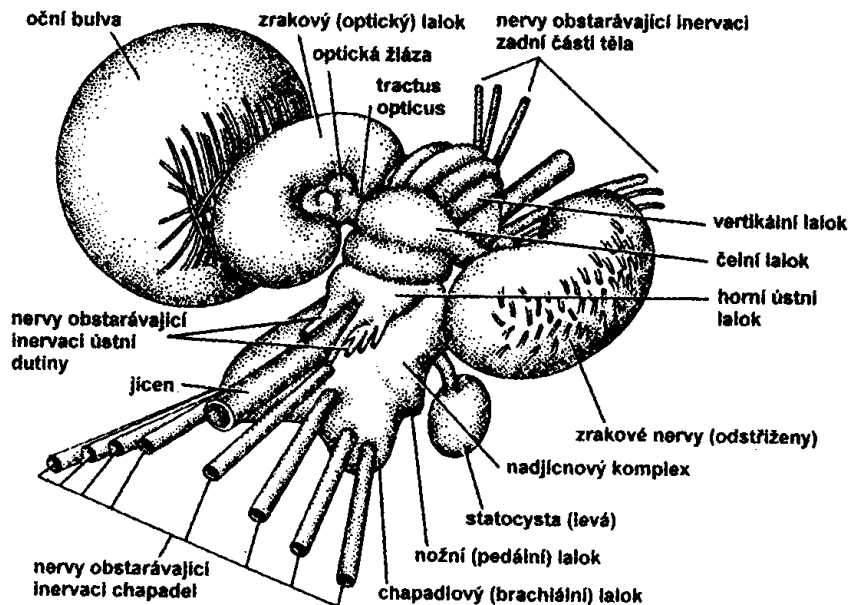


Výchozí radiální typ (A), ploštěnec (B), trochofora (C) a její modifikace v bilaterálně symetrického živočicha (primitivní měkkýš, kroužkovec) - D-F

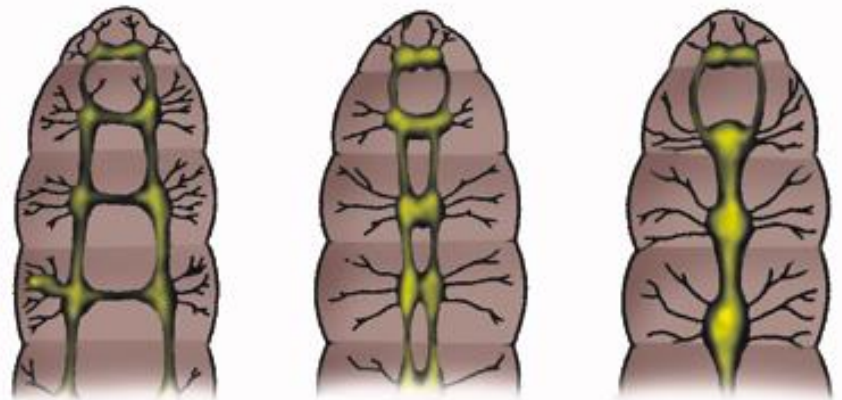
Redukce počtu párů ganglií, jejich mohutnění - souvisí s nesegmentovaným tělem - měkkýši



# Nervová soustava

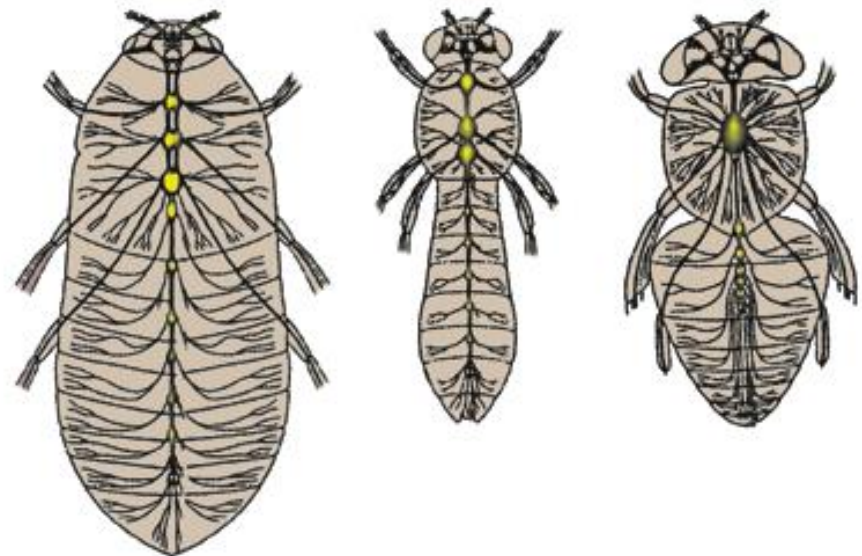


Kroužkovci - trend splývání nervových pruhů a ganglií



**Cephalizace NS u hlavonožců - „mozek“**

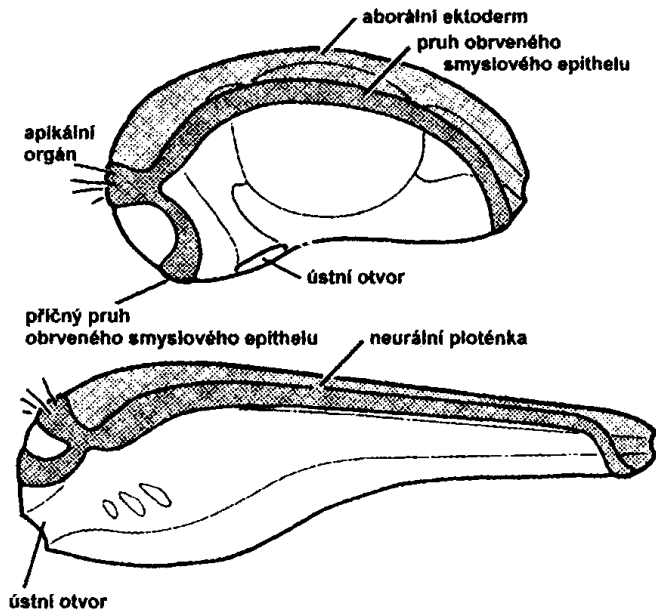
Hmyz - postupná centralizace NS, Metamerie a splývání segmentů



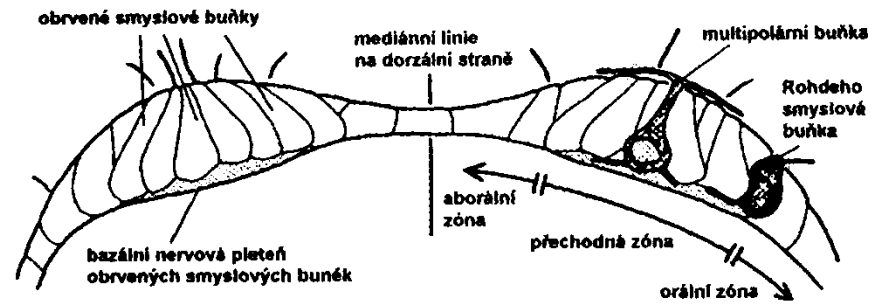
# Nervová soustava

## Trubicová nervová soustava

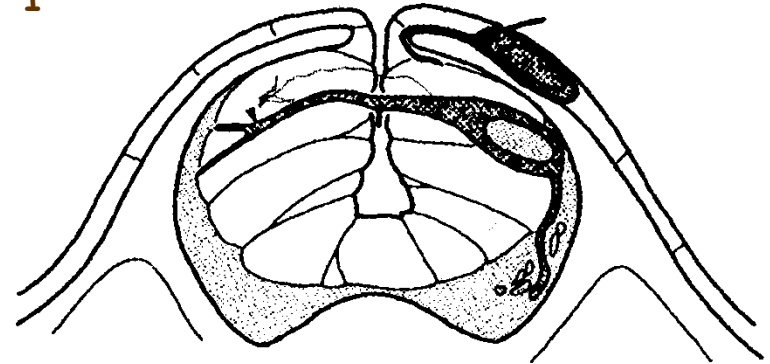
Hypotéza o vzniku nervové trubice strunatců vchlípením obrveného smyslového epitelu (u larev ostnokožců) - podoba neurulace



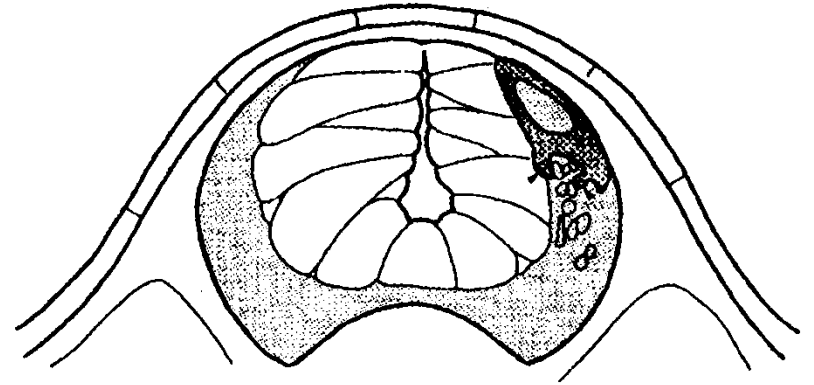
1. Obrvený epitel bipinnarie (hvězdice)
2. Larva kopinatce
3. Obratlovec (chybí Rohdeho smyslová buňka)



1



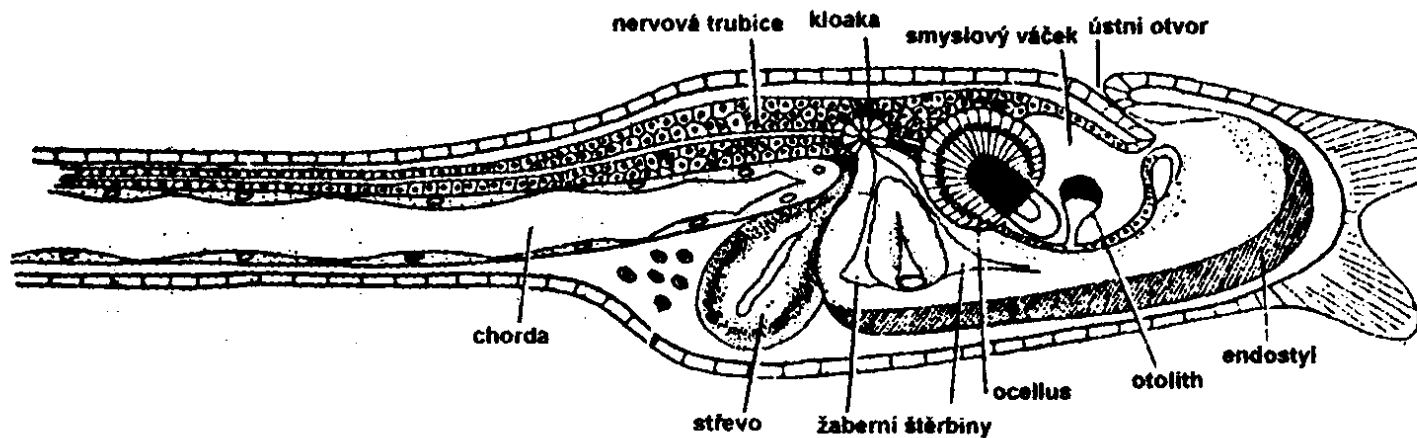
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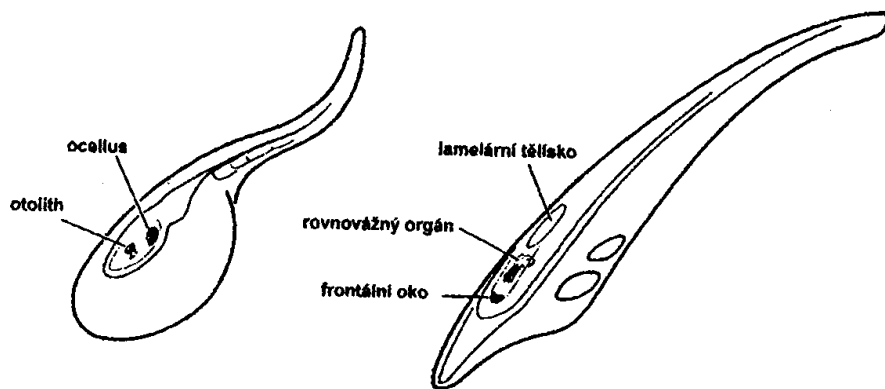
3

# Nervová soustava

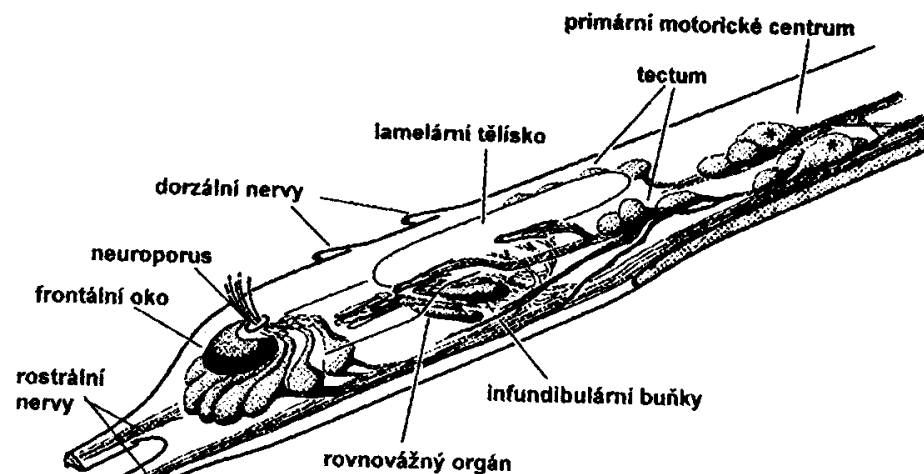
## Larva sumky



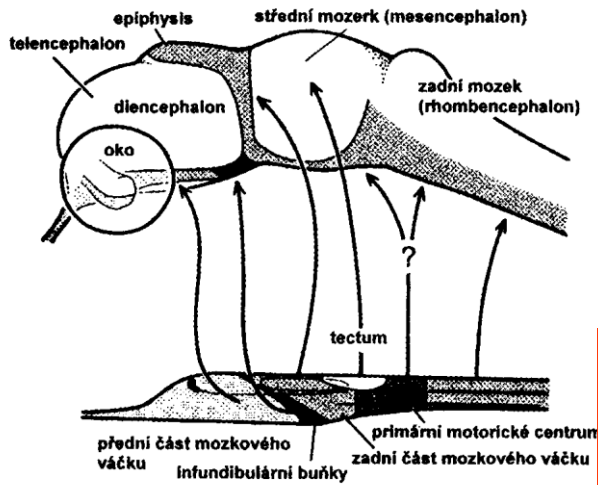
## Smyslový váček larvy pláštěnce v. mozkový váček kopinatce



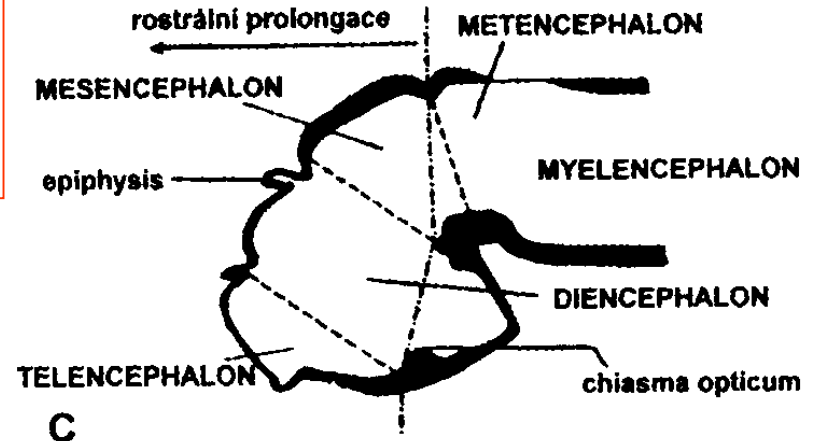
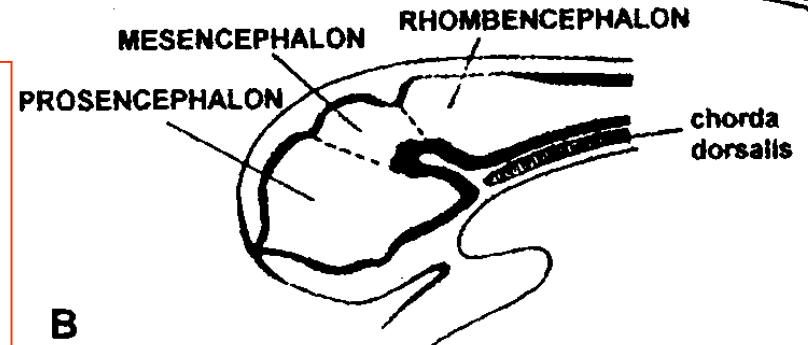
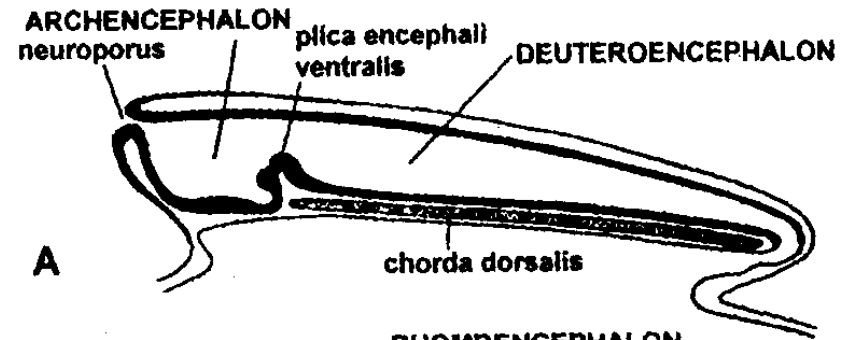
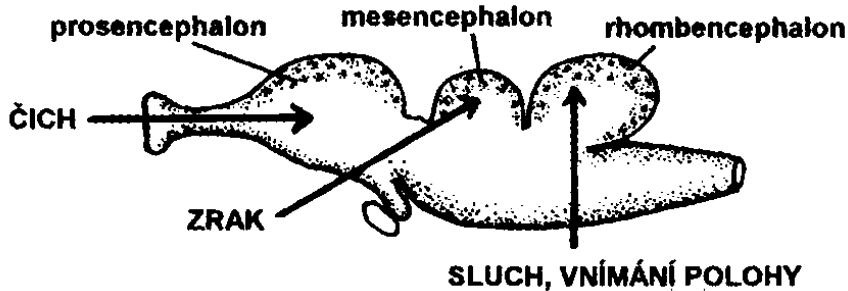
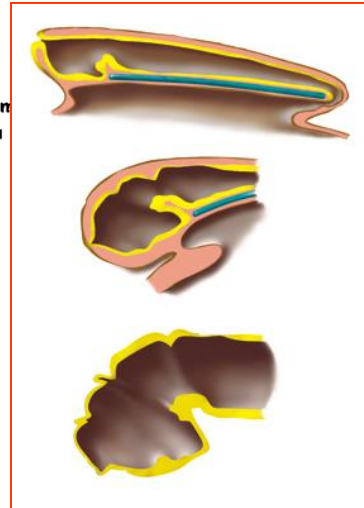
## Hlavová část NS larvy kopinatce



# Nervová soustava



Homologizace mozkového váčku larvy kopinatce s mozkem obratlovce



C



# Nervová soustava

NS = CNS + periferní nervstvo

mozek / mícha

míšní

hlavové (10, 12)

vegetativní systém:

sympaticus a parasympaticus

Mozek - encephalon

A) 2 váčky

1. Prosencephalon
2. Rhombencephalon  
(7 rhombomer - NL, hlava, Hox geny)

B) 3 váčky

1. Prosencephalon
3. Mesencephalon
2. Rhombencephalon

C+D) 5 částí

4. Telencephalon

5. Diencephalon

3. Mesencephalon

6. Metencephalon

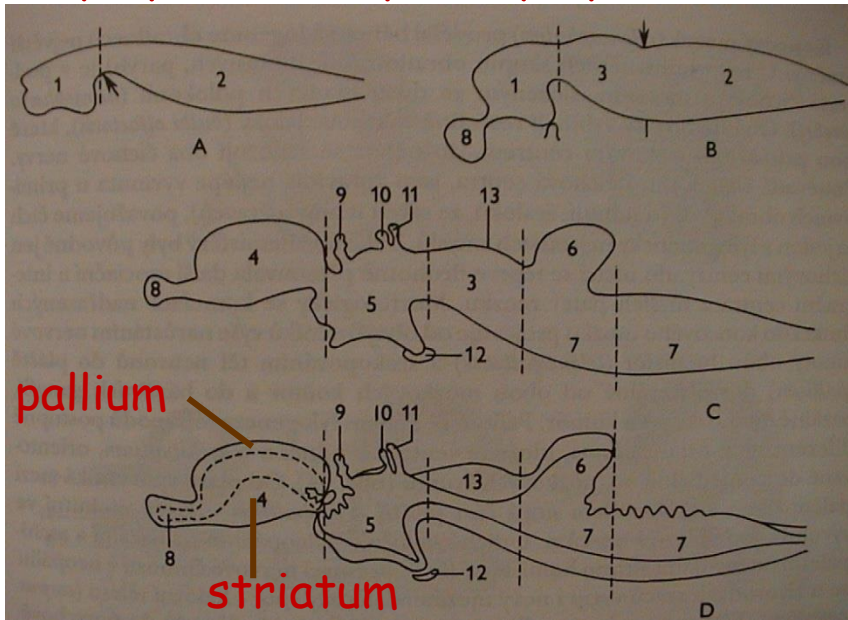
(cerebellum)

pons Varoli

7. Myelencephalon

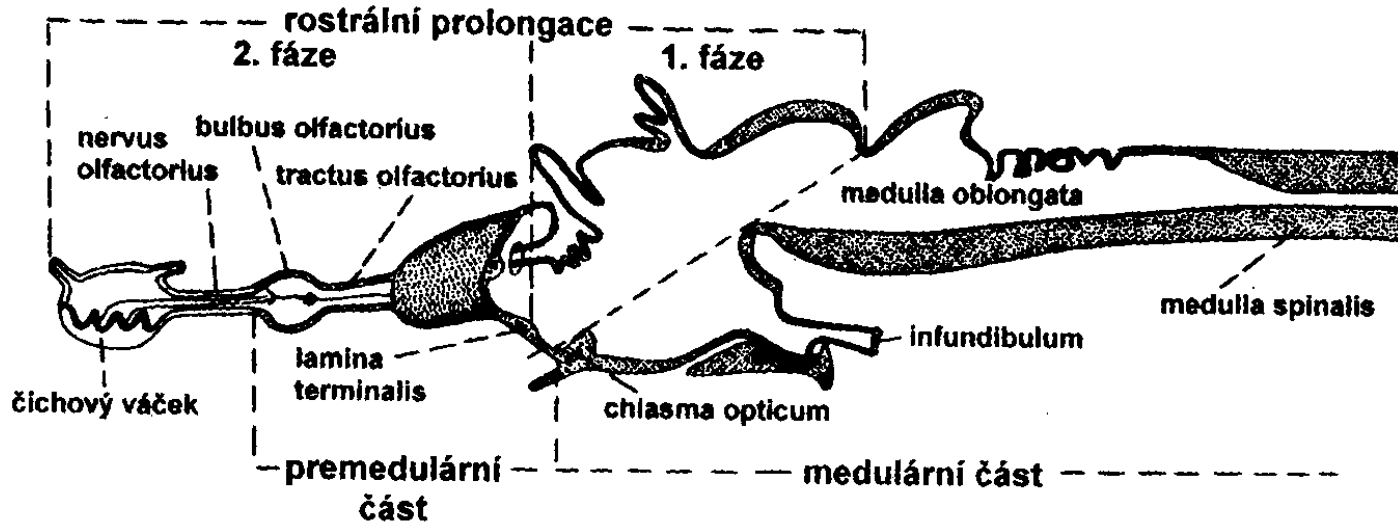
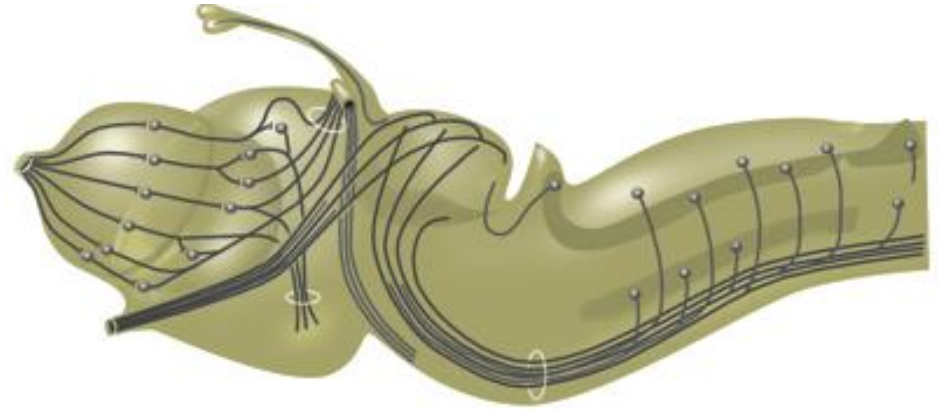
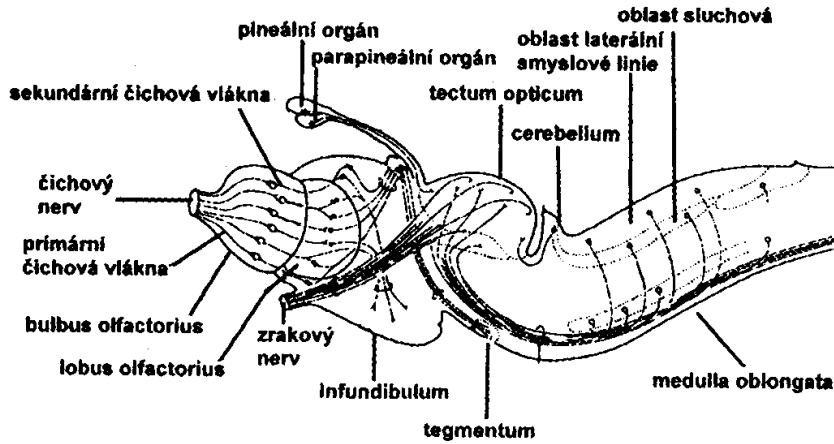
Otx  
Emx

Pax  
Hox



Šedá hmota: bazální ganglia - subpallium (striatum, septum)  
kůra (cortex) - pallium

# Nervová soustava

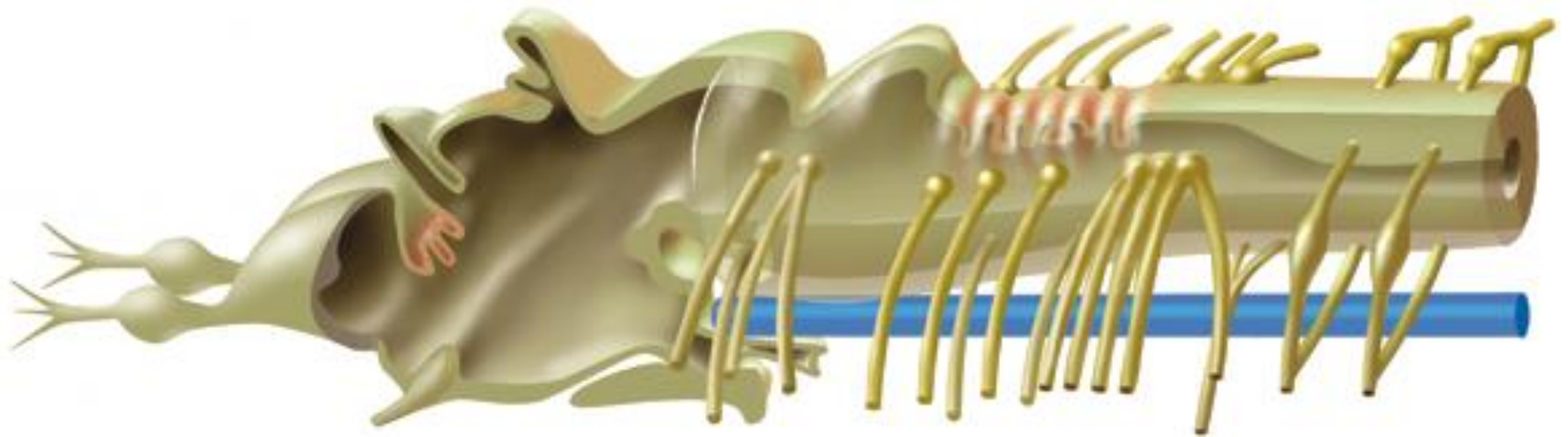
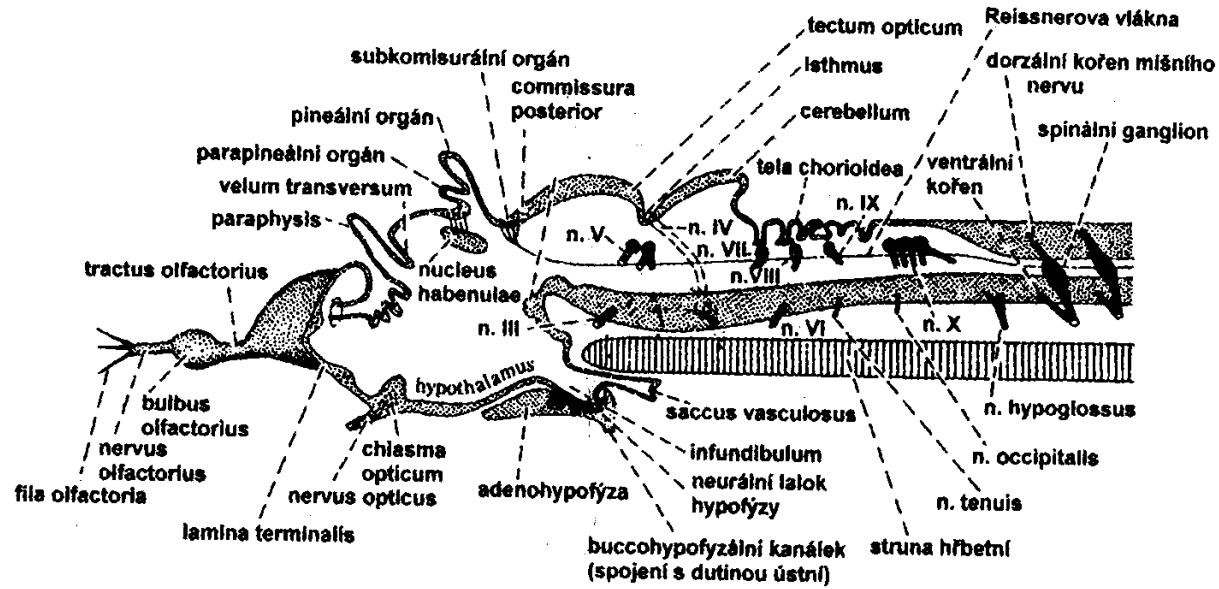


# Nervová soustava



kopinatec

# Nervová soustava

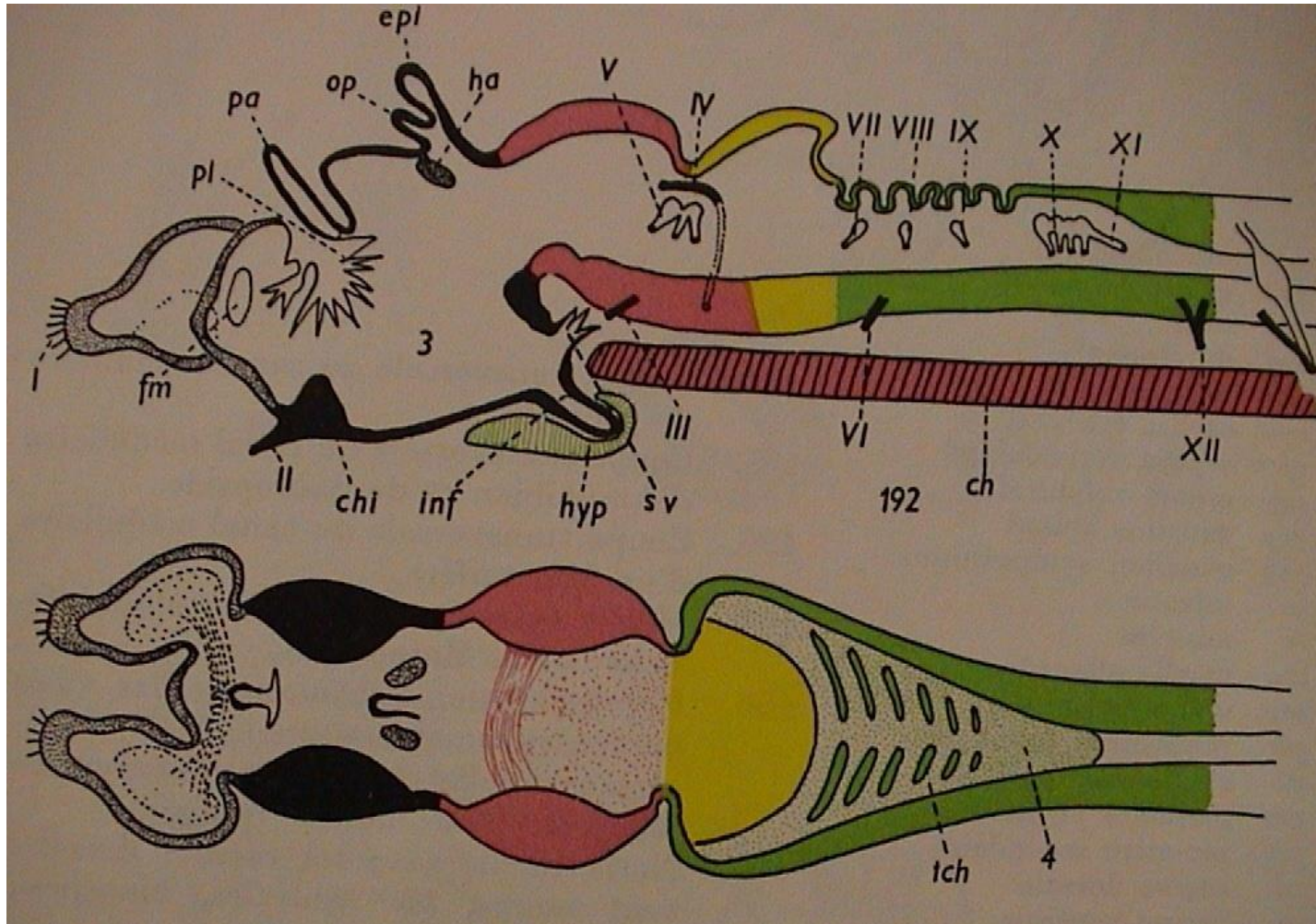




# Nervová soustava

## Mozek obratlovů - encephalon

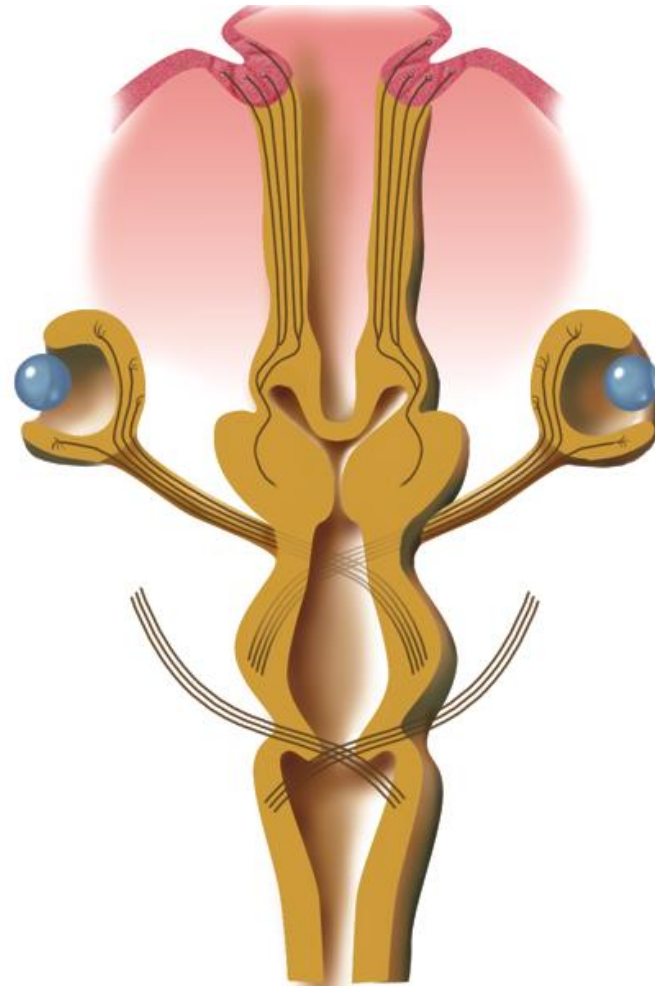
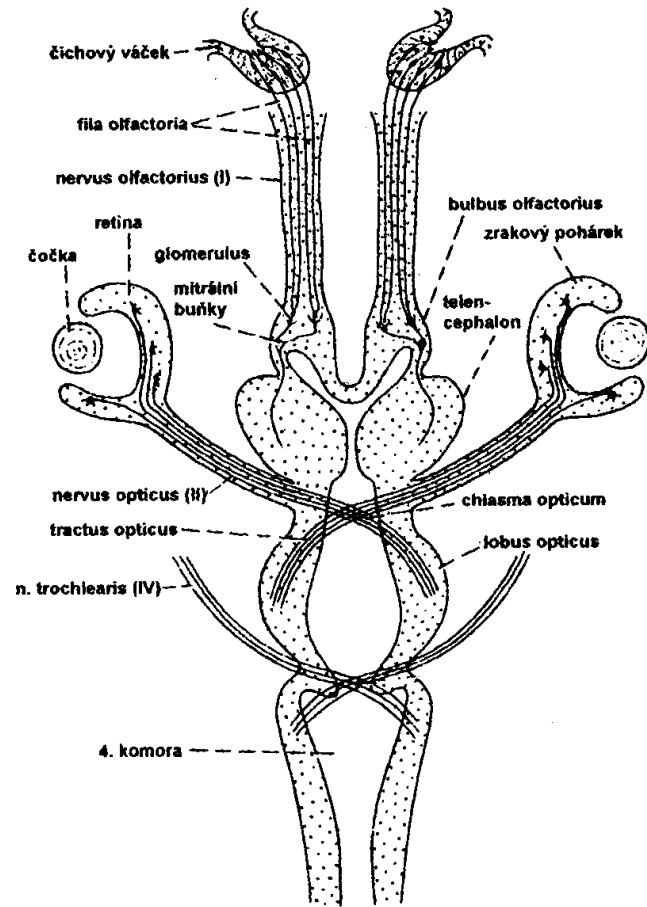
mihule



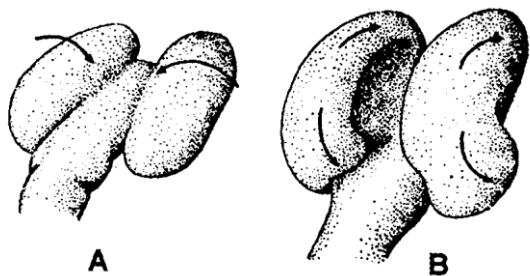
pa - parapineální org., epi - pineální org. (epiphysa)



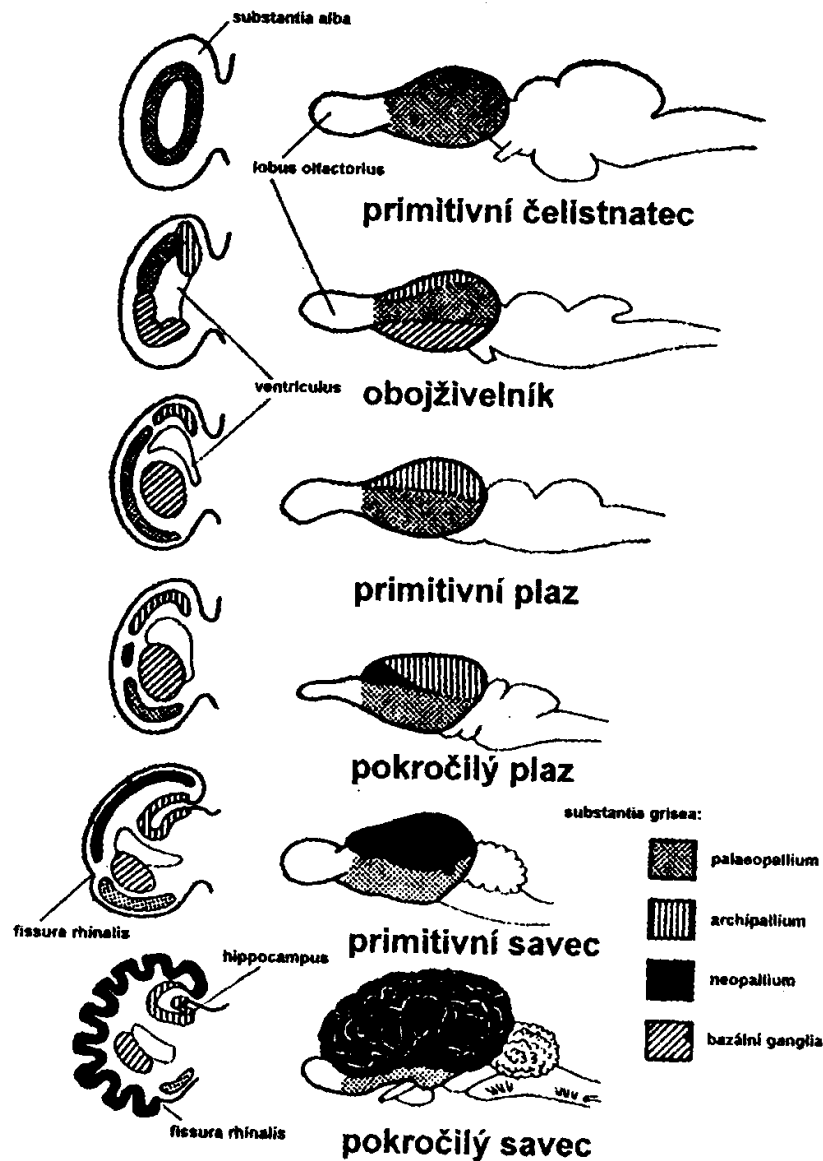
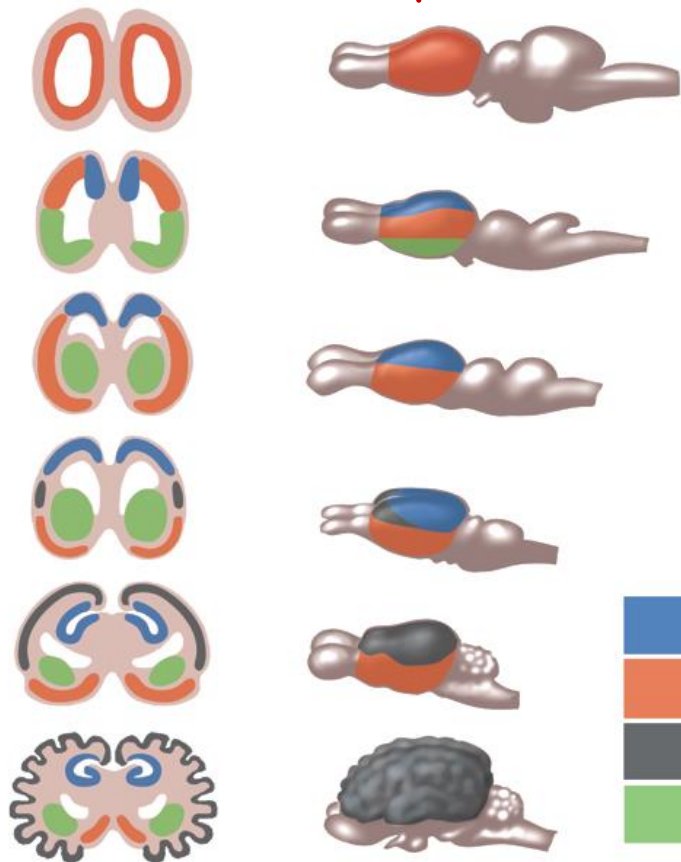
# Nervová soustava



# Nervová soustava



## Růst hemisfér telencephalonu

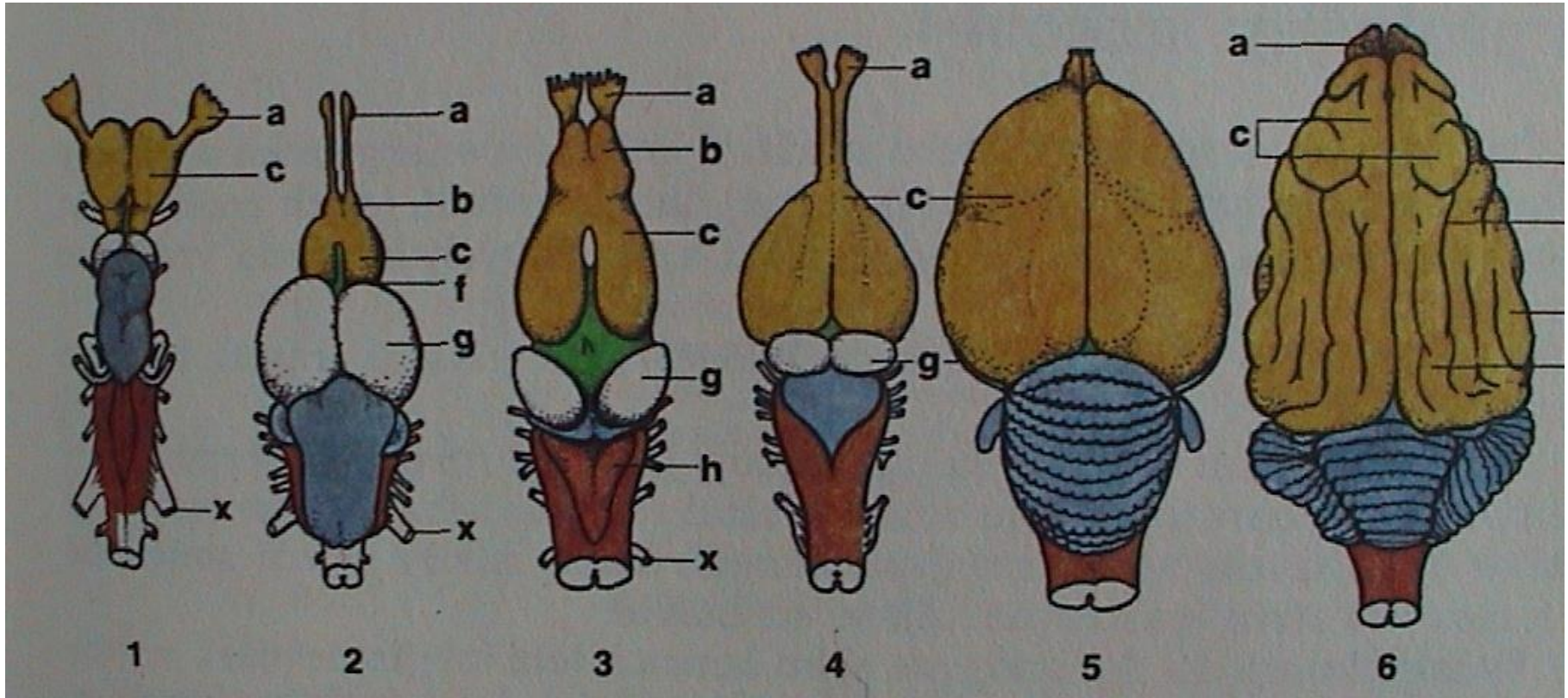






# Nervová soustava

## Mozek - encephalon



Chondrichthyes Teleostei

Amphibia

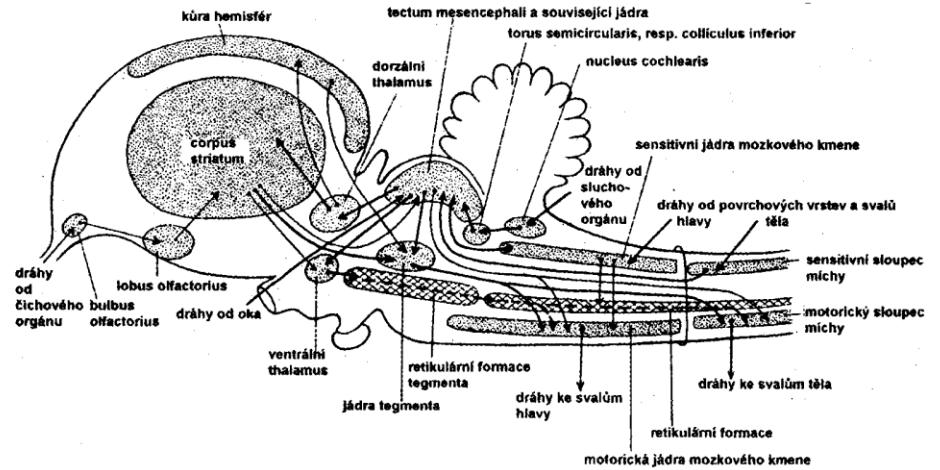
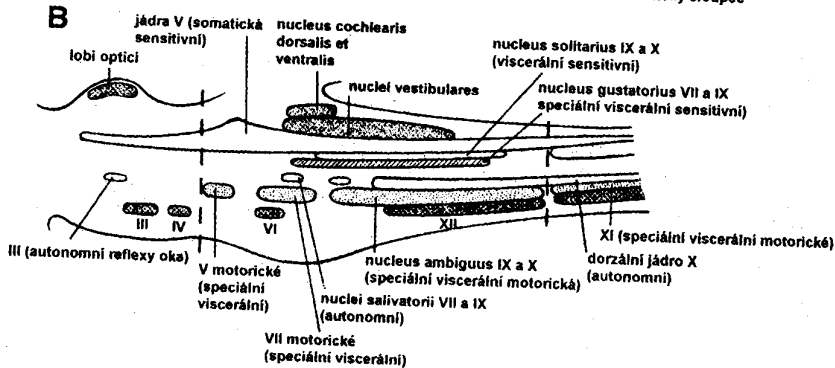
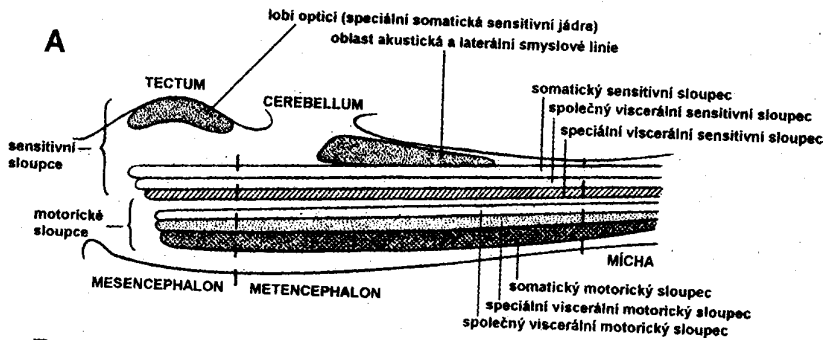
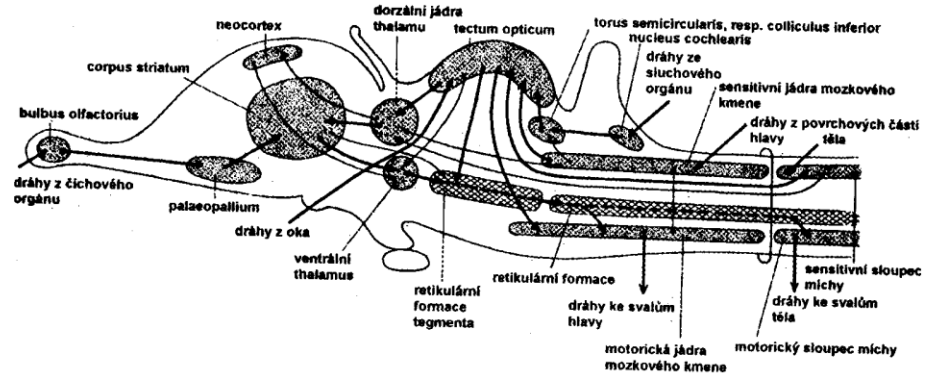
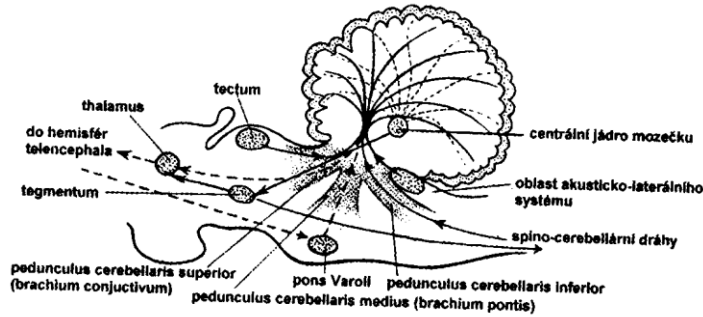
Reptilia

Aves

Mammalia

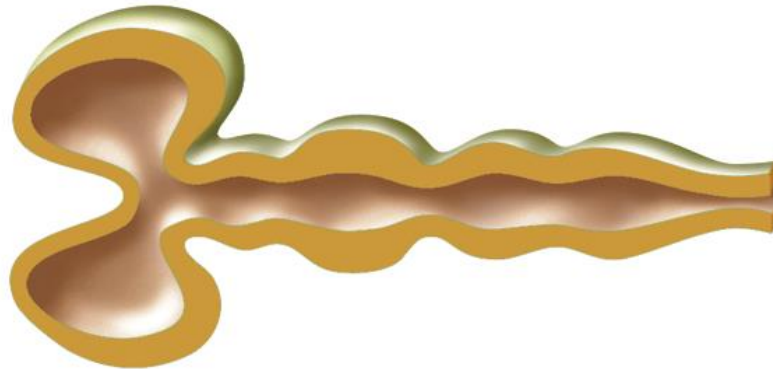
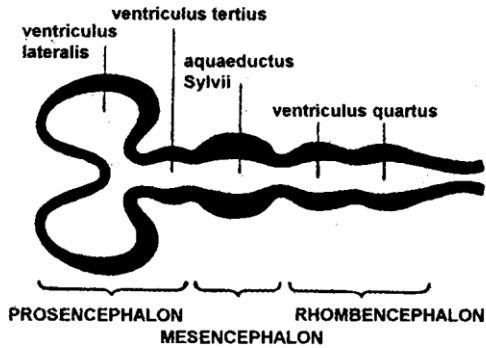
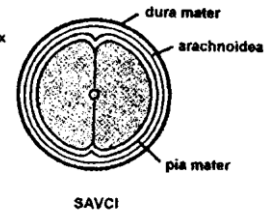
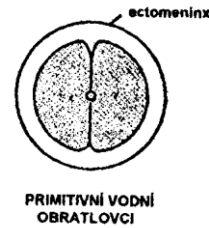
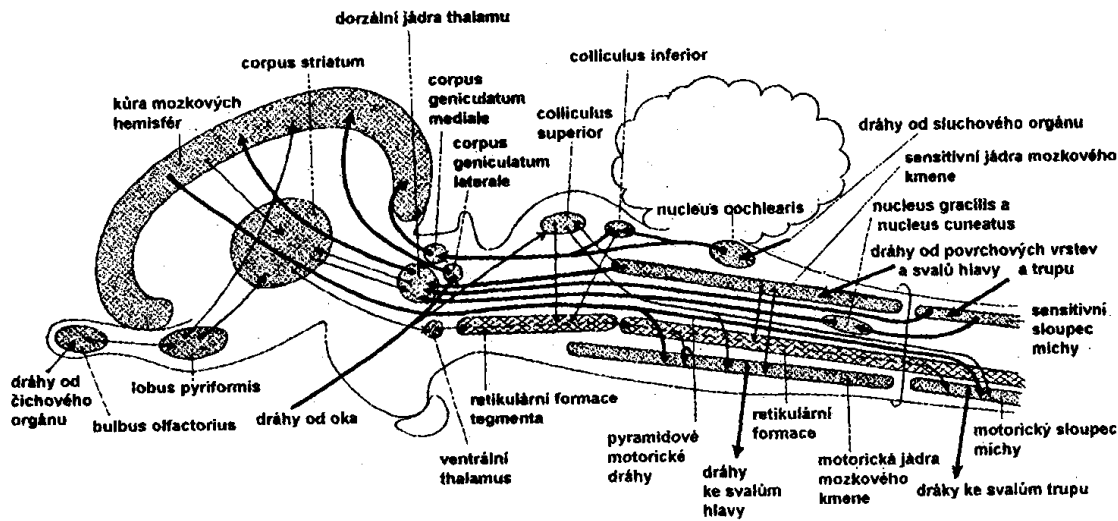
„Agnatha“ - diencephalon  
Teleostei - mesencephalon  
ostatní - telencephalon

# Nervová soustava





# Nervová soustava

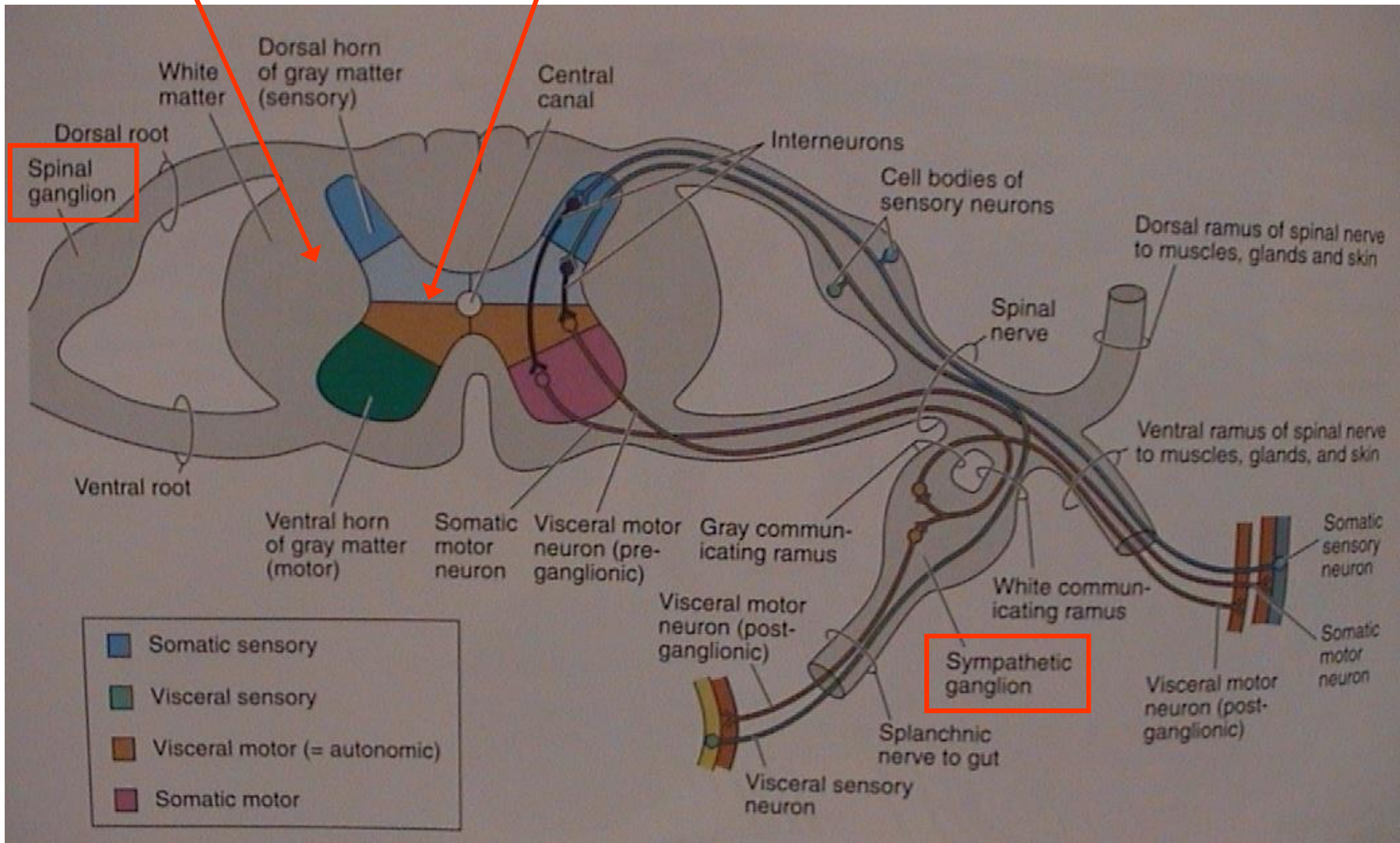


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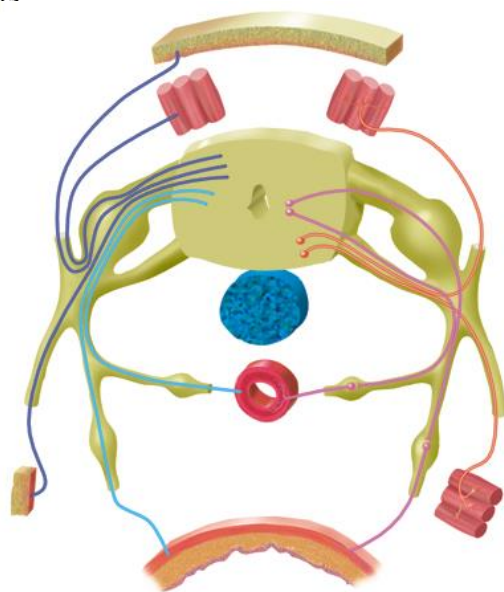
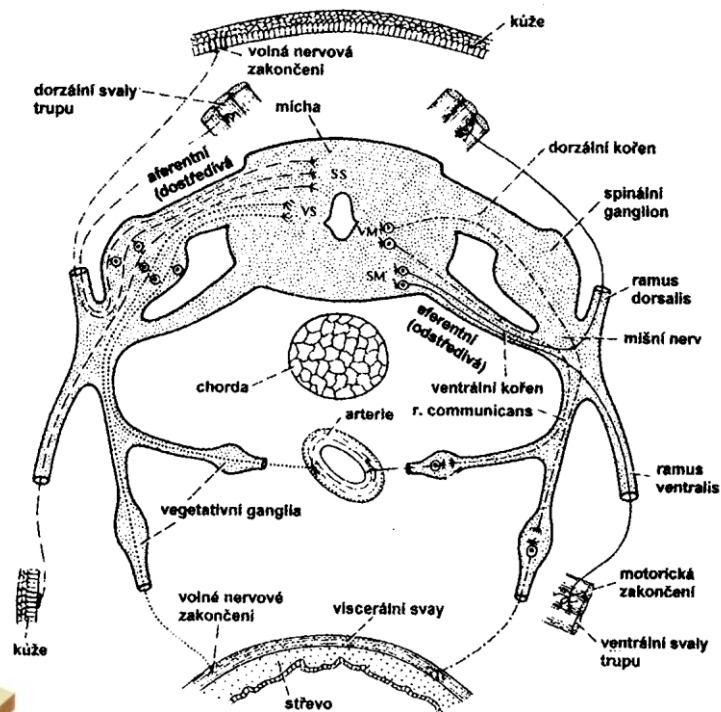
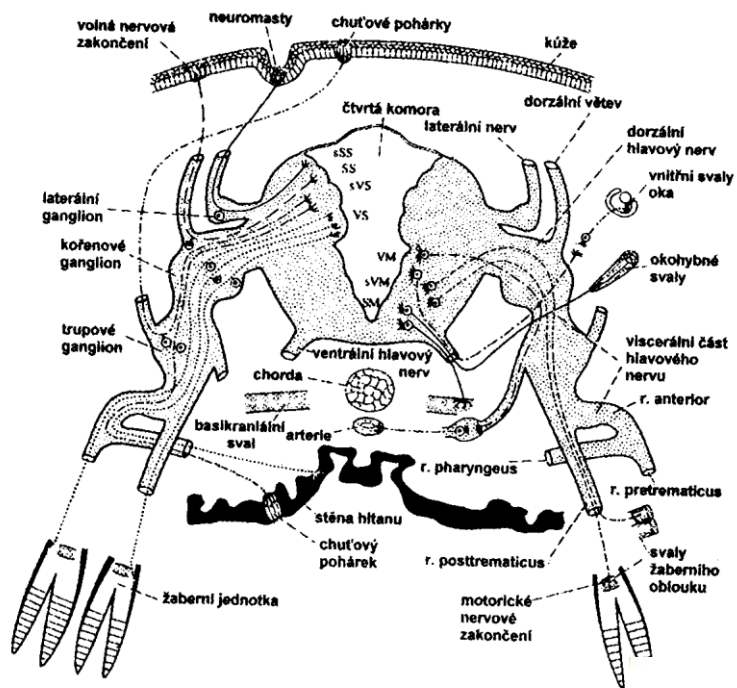
Mícha - medulla spinalis

bílá hmota míšň

šedá hmota míšň



# Nervová soustava





# Nervová soustava

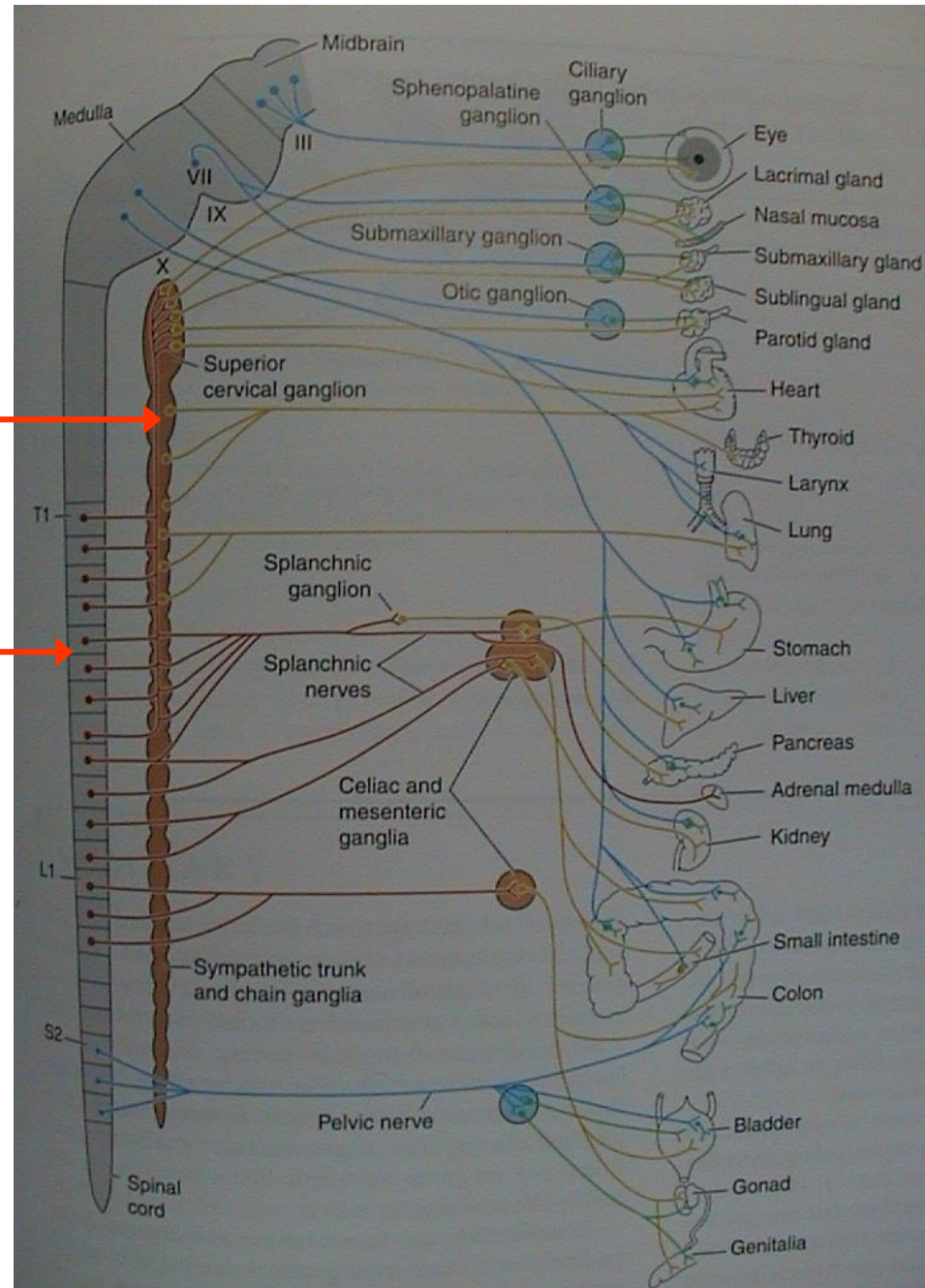
Vegetativní nervstvo

truncus sympaticus  
(sympatický kmen)

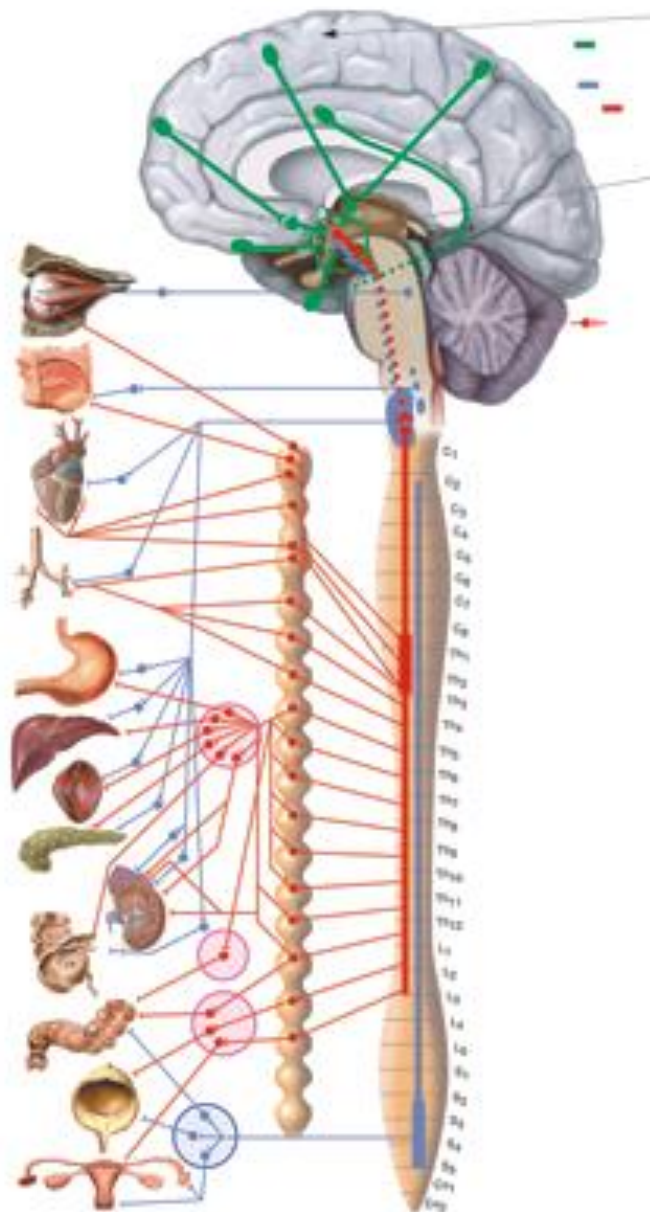
mícha (medulla spinalis)

sympaticus ■

parasympaticus ■



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